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change of a well-known and established name, especially with respect to species not too well defined. Provisionally, therefore, *A. campylocarpa* may be retained as a synonym of the later, but better founded *A. magnifica*.

Canella alba, Murray, (in Linn. Systema Veg. ed. 14, iv. 443, 1784.)

Linnaeus' *Laurus Winterana* (Spec. Pl. ed. 1, 371, 1753, exclusive "Hab. in Carolina") is the oldest name applied to this semi-tropical Florida and West Indian tree. Gaertner (Fruct. i. 377, t. 77, 1788) took up Linnaeus' specific name *Winterana* under *Canella*, but was not followed by subsequent authors. It is evident, however, that Gaertner's *Canella Winterana* should be maintained. Linnaeus' *Winterania Canella* (Spec. Pl. ed. 2, 636, 1763) is also an older name than Murray's *C. alba*, which if taken up would give (*Canella Canella*) a combination, though that fortunately can now be avoided.

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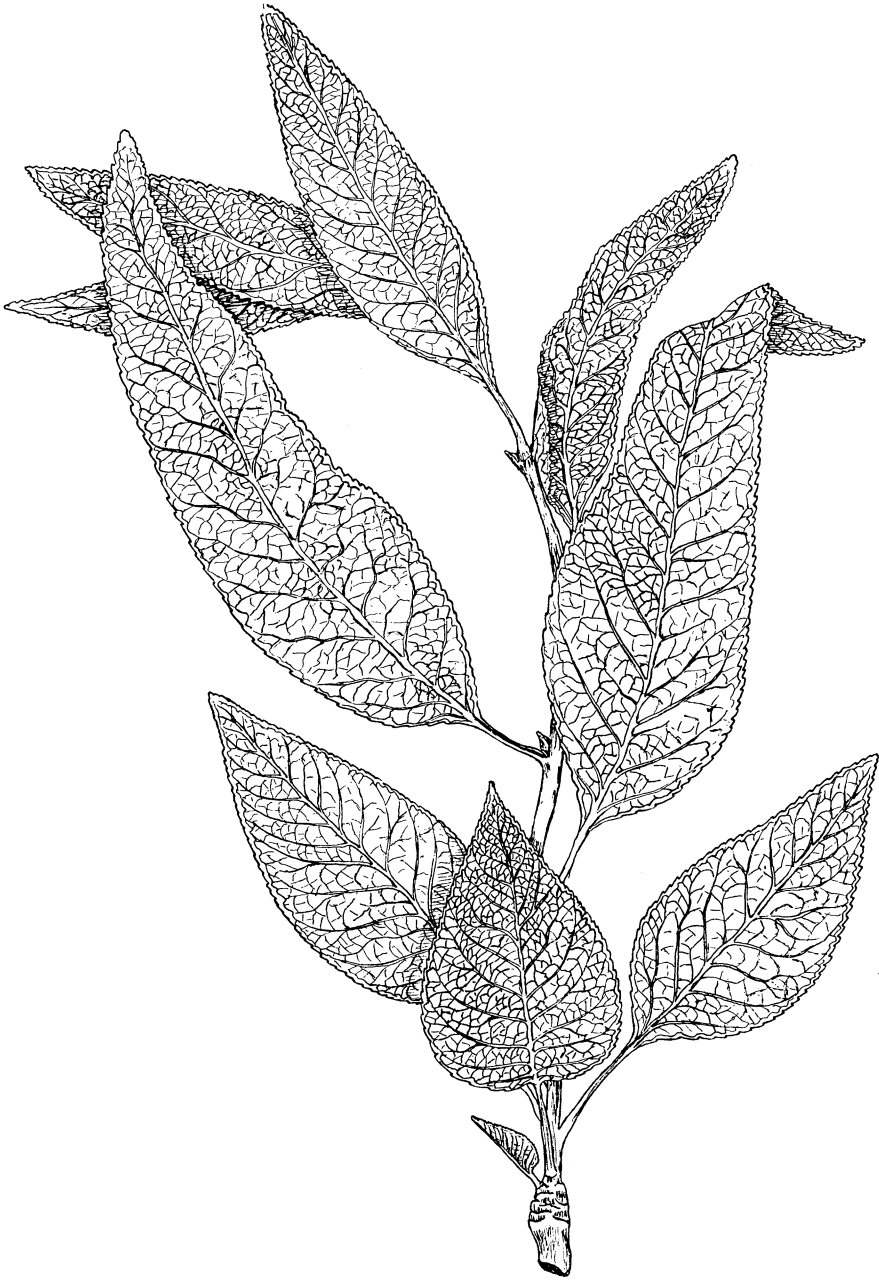
On the American Black Cottonwood.*

By P. A. RYDBERG.

(PLATES CXL. AND CXLI.)

"372. *Populus* sp. When approaching the Carter Canon, in Scott's Bluff County, I saw, at a distance, some dark green trees with pyramidal crowns. Not knowing any other tree with dark foliage and pointed top growing in the region, I took them for unusually tall specimens of *Juniperus Virginiana*. Coming a little nearer, I saw my mistake. It was a *Populus*, unlike all I have seen. As the buds were very balsamiferous and the leaves cuneate at the base, I thought it was nothing but *P. angustifolia*, which I have never seen growing. When at home, I compared it with my specimens of this poplar, collected by Mr. T. A. Williams in the Hat Creek Basin in North-western Nebraska, and I saw at once the difference between the two. Although the leaves of my

*Read before the Botanical Seminar of the University of Nebraska.



POPULUS ANGUSTIFOLIA, JAMES.



POPULUS ACUMINATA, RYDBERG.

poplar are rhomboid-ovate, cuneate at the base, and not whitened beneath, I do believe that, if not distinct from both, it is a variety of *P. balsamifera* rather than of *P. angustifolia*. The leaves are rhomboid, on petioles 1-2 inches long (in *P. angustifolia* they are only $\frac{1}{2}$ -1 inch.), generally long-acuminate, shining on both sides, regularly crenate except at the cuneate base. The teeth are larger, more distant, and more regular than in *P. angustifolia*. Dr. Bessey states that the general appearance of the true *P. angustifolia* is more that of a willow than of a poplar, which is not at all the case with this. The general growth, the size, form, and color of the trunk were somewhat between those of *P. balsamifera* and *P. angulata*, although most like the former. The long and slender petioles remind one of the latter or even of the Quaking Aspen. Dr. S. Watson says in his Revision about *P. angustifolia*: "Two forms are spoken of, the Yellow Cottonwood, making fair lumber, and the Black Cottonwood, common and extensively planted in Utah, but the wood is considered worthless." May be, this is the former. I saw it growing only at one place, viz., in Carter Canon, where it grew along the brook, together with *P. angulata*. The grove contained over 100 trees of this poplar, 40 to 60 feet high, some measuring 18 inches in diameter. Carter Canon, S. B. Co., July 26."

The above is an abstract from my list of plants, collected in Western Nebraska, in the summer 1891, for the U. S. Department of Agriculture. John M. Holzinger, Assistant Botanist of the same department, who afterwards examined my collection, wrote me, among other things concerning this tree: "I make it, after careful consideration, *Populus angustifolia*, James. The difficulty seems to arise from the mature leaves: herb. material generally has them undeveloped." I still believe, however, the above to be distinct from *P. angustifolia*, James, or, at least, from what we have been used to call so. I saw both, this summer:—my No. 372 both with undeveloped and mature leaves, and the true *P. angustifolia*, on the 28th of June, at which time the leaves, although not mature, yet had received their form. Specimens with mature leaves are found in the herbarium of the University of Nebraska.

Judging from the material on hand, I do not hesitate to declare them to be distinct species. Perhaps, if I had a fuller series of specimens, I would be of another opinion. Taking for granted

that they are two distinct species, or, at least, two varieties, let us see which has the right to the name of *Populus angustifolia*, James.

The original description by James I have not seen, but I must suppose that both Dr. Watson and Nuttall knew James' tree, and have described the same. Dr. Watson writes in his Revision of the North American Cottonwoods:

"*P. angustifolia*, James. Leaves not white beneath, rhombic-ovate to narrowly lanceolate, mostly cuneate at the base, often small, petioles one-half inch long or less (rarely one inch), etc."

In King's Report, the description of *Populus balsamifera*, var. *angustifolia*, contains among other characters:

" . . . leaves ovate-lanceolate, attenuate at the base, acute, glabrous, crenate-serrate. Leaves varying much between the ordinary growth (2'-3' long by 8"-12" wide, acute and often sub-rhomboidal) and that of younger shoots where they may be 6'-8' long and 3' or more broad, and often cordate at base, always with long acumination."

Nuttall, in *Silva Americana*, gives about the same description, and adds:

"The footstalks of the leaves or petioles are about three-fourths to an inch in length. The nerves are all faint beneath and pinnate, with no appearance of being 3-nerved at the base; the number of these nerves or lateral vessels is twelve to fifteen on a side, at least double the number they are in the Balsam Poplar."

These descriptions can only apply to the form we are used to call *P. angustifolia*, James. All specimens thereof found at present in the Herbarium of the University of Nebraska, agree in that the petioles are short, from $\frac{1}{2}$ to 1 inch long, and the lateral nerves are, at least in the larger leaves, about 10-15 on each side. (See Plate CXL.). In the specimens of my No. 372, from Carter Canon, and of the same tree collected, this year, at Hot Springs, S. D., the petioles are from 1-2 inches or even more, and the lateral nerves seldom more than 8.

As it is remarked by Dr. Watson, the leaves of the Black Cottonwood vary considerably, especially on young shoots. All specimens I have used for comparison are taken, however, from trees over 20 feet high. The first leaves from the bud are generally more or less ovate, 1-2 $\frac{1}{2}$ inches long. These are followed by

lanceolate leaves, 2–5 inches. All the leaves are gradually acuminate towards the apex, and finely crenate-serrate from base to tip. In the specimens collected by Dr. Bessey, at Manitou, Col., July 18, 1886, the first leaves are very broad, with rounded or even cordate base. In my own specimens from Little Elk Canon, S. D., June 28, 1892, the leaves are small and nearly all lanceolate.

The leaves of my No. 372 differ, besides in the length of the petiole, in being rhomboidal, always having cuneate base and an abrupt acumination. The teeth are scarcely any from the base to near the broadest part of the leaf, from there they are more regular and larger than in *P. angustifolia*, till they disappear again at the acumination. The specimens from Carter Canon have the leaves twice as long as broad, and with long acumination. In those from Hot Springs the leaves are broader (the breadth equalling $\frac{2}{3}$ or $\frac{3}{4}$ of the length) with a shorter acumination. The latter are in form like the leaves of *P. Hudsonica*, Michx. f., figured in *Silva Americana*, but the shoots and petioles are not hairy. They also resemble those of the Black Cottonwood of Europe, *P. nigra* (*P. Hudsonica*, according to Gray), which, however, if I am not mistaken, has angled petioles. It seems to approach the true cottonwoods in several respects.* I have mentioned above the form of the leaves and the length of the petioles. The old bark resembles somewhat that of *P. monilifera*, but is whiter. The crown, although pyramidal in form, is more extensive than in *P. angustifolia*, the branches being more spreading and the leaves semi-pendent. The trees of *P. angustifolia* that I have seen were all narrowly pyramidal with ascending branches, giving them the aspect of a willow, a fact, as is stated before, which then has been noticed by Dr. Bessey.

What, is this cottonwood? Four alternatives present themselves to me: a species distinct from *P. angustifolia*, a local variety, a mere form of the same, or a hybrid. As I have stated before, I am most inclined to believe the first. A local variety, produced by the climate, it cannot very well be, as the two are growing in

*In D.C. Prod., the American Black Cottonwood is referred to the common Cottonwood, under the name *Populus Canadensis*, var. *angustifolia*, Wesmael. To place our *P. angustifolia* as a variety of *P. Canadensis* (*P. monilifera*) was, indeed, a blunder. If Wesmael had seen my No. 372, instead of the true *P. angustifolia*, the mistake would be, perhaps, more excusable.

the same habitat, viz.: in canons, near water, at the same altitude, and in the same region. A mere form, or individual variation of the Black Cottonwood, it cannot be. Of the more than 100 trees growing in Carter Canon, I did not see a single one that had lanceolate leaves with short petioles, nor a narrow crown; and at Little Elk, where I saw about as many trees of the true *P. angustifolia*, I did not notice a single one that had the long petioles and abrupt acumination characteristic of my No. 372. At Hot Springs, I saw only three Black Cottonwoods, and all three agreed with those from Carter Canon, except that the leaves were broader. Dr. Chas. E. Bessey and Prof. T. A. Williams, of South Dakota Agricultural College, who have both seen the Black Cottonwood several times have not seen a form like this. The fact that my No. 372, in both places was growing together with *P. monilifera*, might suggest the possibility of its being a hybrid of that and *P. angustifolia*; but the total absence of the latter tends to show the contrary.

Believing that there are two American Black Cottonwoods, I shall try to give the distinguishing characters:

Populus angustifolia, James.—Leaves lanceolate or ovate, gradually acuminate, with cuneate, rounded, or heart-shaped base, on short petioles ($\frac{1}{2}$ inch long), thickish, drying yellowish or brownish, finely crenate-serrate from base to apex; lateral nerves in the larger leaves often 10-15; crown narrowly pyramidal with ascending branches. Collected by Dr. Chas. E. Bessey, at Manitou, Col., July 18, 1886, etc.; by T. A. Williams, in War Bonnet Canon, June, 1890, etc.; by myself, in Little Elk Canon. (Plate CXL.)

Populus acuminata, n. sp. (No. 372 of my Nebraska Collection). Leaves more or less rhomboidal, abruptly acuminate, with cuneate base and long petioles (1'-2' long, or more), semi-pendent, thinner than in the preceding, drying green; denticulation scarcely any at the base and near the top; at the middle, regular and larger than in the preceding; lateral nerves seldom more than 8 on each side; crown broadly pyramidal with spreading branches. Collected by me in Carter Canon, Scott's Bluff Co., Neb., July 25, 1891, and at Hot Springs, S. D. (Plate CXXI.)

LUTHER ACADEMY, WAHOO, NEB., Oct. 15, 1892.

[Mr. Rydberg's description of *P. angustifolia* and his figure (Plate CNL.) agree accurately with James' type specimen, preserved in Herb. Torrey. N. L. B.]